UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/743,537	12/23/2003	David John Gwilt	550-501	5788

23117	7590	11/23/2005

NIXON & VANDERHYE, PC
901 NORTH GLEBE ROAD, 11TH FLOOR
ARLINGTON, VA 22203

EXAMINER
MISIURA, BRIAN THOMAS

ART UNIT	PAPER NUMBER
2112	

DATE MAILED: 11/23/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

	Application No.	Applicant(s)
Office Action Summary	10/743,537	GWILT, DAVID JOHN
	Examiner	Art Unit	
	Brian T. Misiura	2112	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on _25 May 2004_.

2a) ☐ This action is **FINAL**.   2b) ☒ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) _1-95_ is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) _1-95_ is/are rejected.

7) ☒ Claim(s) _____ is/are objected to.

8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☒ The drawing(s) filed on _25 May 2004_ is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a) ☐ All   b) ☐ Some * c) ☐ None of:

      1. ☐ Certified copies of the priority documents have been received.

      2. ☐ Certified copies of the priority documents have been received in Application No. _____.

      3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
    Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: _____.

Detailed Action

Claim Objections

Claim 15 is objected to because of the following informalities: Claim 15 is dependent upon Claim 12, which claims "A data processing apparatus". Based on the pattern of the claims, the examiner believes Claim 15 was meant to be dependent upon Claim 13. The examiner will treat Claim 15 as though it were dependent upon Claim 13. Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

1.   Claims 1-6, 8-18, 20-30, 32-42, 44-54, 56-77, 79-89, 91-95 are rejected under 35 U.S.C. 102(b) as being anticipated by Hill et al. U.S. Patent No. 6,732,242.

2.   Per claims 1, 13, 25, 37, 49, 61, 72, and 84, Hill discloses: a data processing apparatus comprising:

- a master device (figure 1 numeral 102);
- a slave device (figure 1 numeral 120);
- and a communication bus operable to pass transaction requests from said master device to said slave device (figure 1 numeral 118);
- wherein said master device having a transaction annotator (column 2 lines 12-15, figure 1 numeral 104) operable to generate a transaction identifier as part of each transaction request (column 2 lines 37-45, figure 1) passed

from said master device to said slave device (column 4 lines 1-23, figures 1 and 2),

- said transaction identifier having a master identifier portion (column 9 lines 13-20, figure 5 numerals 518, 520, 522) and a priority request portion specifying a priority value for said transaction request (column 9 lines 13-22, figure 5 numeral 524);

- and said slave device having transaction ordering logic (figure 5 numeral 506) operable to determine an order of service of a plurality of transaction requests having respective transaction identifiers in dependence upon transaction ordering constraints at least partially derived from master identifier portions of said transaction identifiers and in dependence upon said priority values of said transaction identifiers (column 9 lines 46-55, figure 5).

3.   Per claims 2, 14, 26, 38, 50, 62, 73, 85, Hill discloses a data processing apparatus according to claim 1, in which said master identifier portion specifies one of a plurality of possible master identifier values associated with said master device (column 9 lines 15-20, figure 5).

4.   Per claims 3, 15, 27, 39, 51, 63, 74, 86, Hill discloses: a data processing apparatus according to claim 2, in which said transaction ordering constraints relate only to subsets of transaction requests generated by said master device for which said master identifier portion specifies an identical master identifier value (column 9 lines 13-22, figure 5).

5.   Per claims 4, 16, 28, 40, 52, 64, 75, 87, Hill discloses: a data processing apparatus according to claim 1, in which said transaction ordering constraints are partially derived from at least one of a request type of a transaction associated with said transaction identifier (column 4 lines 3-7, figure 2) and a comparison of memory address ranges specified by said transaction requests (column 3 lines

16-31 figure 1).

6.   Per claims 5, 17, 29, 41, 53, 65, 76, 88, Hill discloses: a data processing apparatus according to claim 1, in which said priority value is used to derive a timeout value for servicing of a transaction request associated with said transaction identifier (column 9 lines 46-55, figure 5).

7.   Per claims 6, 18, 30, 42, 54, 66, 77, 89, Hill discloses: a data processing apparatus according to claim 5, in which said timeout value is derived from concatenated values of at least part of said master identifier portion and said priority portion of said transaction identifier (column 9 lines 46-55, figure 5).

8.   Per claims 8, 20, 32, 44, 56, 67, 79, 91, Hill discloses: a data processing apparatus according to claim 1, in which said priority request portion comprises at least one bit value specifying either a high priority or a low priority for a transaction request associated with said transaction identifier (column 9 lines 20-33, figures 1 and 5).

9.   Per claims 9, 21, 33, 45, 57, 68, 80, 92, Hill discloses: a data processing apparatus according to claim 1, in which said transaction request is either a read request for reading data from a memory attached to said slave device or a write request for writing data to said memory attached to said slave device (column 1 lines 29-42).

10.   Per claims 10, 22, 34, 46, 58, 69, 81, 93, Hill discloses: a data processing apparatus according to claim 1, in which said transaction identifier comprises a sequence of bit values (column 9 lines 13-15, figure 5)

and said slave device is programmable to apply a mask to said transaction identifier determining which of said sequence bit values correspond to said

priority portion and which of said sequence of bit values correspond to said master identifier portion (column 10 lines 49-51, figure 5 and column 12 lines 2-6 figure 6) (Since the "ordered transaction masks" are used to "identify order-dependent requests", and the "order-dependent requests" can be distinguished by the "request type", the master identifier portion would therefore be identified, leaving the remaining portion of the identifier to be the priority portion).

11.   Per claims 11, 23, 35, 47, 59, 70, 82, 94, Hill discloses: a data processing apparatus according to claim 1, in which said slave device is a memory controller (column 2 lines 28-32).

12.   Per claims 12, 24, 36, 48, 60, 71, 83, 95, Hill discloses: a data processing apparatus according to claim 1, in which said master device is one of: a central processing unit (figure 1 numeral 102); a direct memory access controller; a liquid crystal display controller; or a video accelerator.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* v. *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1.   Determining the scope and contents of the prior art.

2.   Ascertaining the differences between the prior art and the claims at issue.

3.   Resolving the level of ordinary skill in the pertinent art.

4.   Considering objective evidence present in the application indicating obviousness or nonobviousness.

13.   Claims 7, 19, 31, 43, 55, 78, 90 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hill et al. U.S. Patent No. 6,732,242, in view of Rosenberg et al. U.S. Patent No. 5,450,562.

14.   Per claims 7, 19, 31, 43, 55, 78, 90, Hill does not disclose: a data processing apparatus according to claim 6, in which said slave device comprises logic operable to select a subset of bits of said master identifier portion to be concatenated with said priority portion of said transaction identifier to derive said timeout value.

However, Rosenberg discloses: a data processing apparatus according to claim 6, in which said slave device comprises logic operable to select a subset of bits of said master identifier portion to be concatenated with said priority portion of said transaction identifier to derive said timeout value (Rosenburg, column 7 lines 42-45).

-      It would have been obvious to one having ordinary skill in the art at the time of the applicant's claimed invention to incorporate the teaching of Rosenberg into the system of Hill to create a timeout value using the bits from different address segments.

-      the modification would have been obvious because one having ordinary skill in the art would want to create a timeout value using the bits from different address segments (Rosenburg, column 7 lines 42-45).
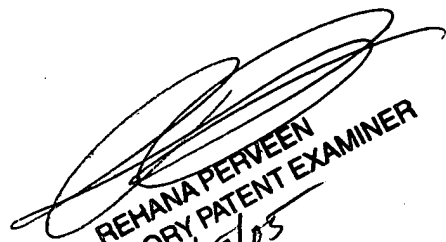
Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brian T. Misiura whose telephone number is (571) 272-0889. The examiner can normally be reached on M-F 8:00-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rehana Perveen can be reached on (571)272-3676. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

BTM